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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/561,254

12/19/2005

Hiroshi Sekine

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EXAMINER

PILKINGTON, JAMES

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/561,254	Applicant(s) SEKINE ET AL.	
	Examiner JAMES PILKINGTON	Art Unit 3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/19/05 4/1/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the cross member having four spider arms, each crossing another in a cross pattern (clm 1, drawings show four spider arms, two of which from one leg of the cross member, the cross members form the cross pattern, all four of the spider arms do not cross each other because two must be coaxial to make the a leg), the cam surface on the spider arm engaging a projection provided in said yoke arm (clm 5, drawings show engaging bearing cap), the vehicle body (clm 9, 11 and 12) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 1 and 6 are objected to because of the following informalities:

- Claim 1 line 9 “the rest two” should be - - the other two - -
- Claim 6 line 1 “bearing cut” should be - - bearing cup - -

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 5 and 6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Re clm 5, the specification as originally filed does not provide enablement for the cam surface of the spider arms to engage projections provided in the yoke arms. The specification only provides support for an engagement between the bearing cup and the cam surfaces.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 9, 11 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 9, 11 and 12 recite the limitation “a steering mechanism at the side of vehicle body.” It is not understood what is meant by this limitation. What is meant by “at the side of the vehicle body”?

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 2 and 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Myers, USP 5,725,431.

Myers discloses a universal joint, comprising:

- An input shaft (driving shaft C4/L28-48)
- A pair of yoke arms provide for said input shaft (houses cap 20, C4/L28-48)
- An output shaft (driven shaft C4/L28-48)
- A pair of yoke arms provide for said output shaft (houses cap 20, C4/L28-48)
- a cross member (11) having four spider arms (12), each crossing another in a cross pattern (see figure 1);

- two bearings (21) provided between the tip parts of two of said four spider arms (12), which are disposed oppositely to each other and the two yoke arms of the input shaft;
- two bearings (21) provided between the tip parts of the other two of said four spider arms (12), which are disposed oppositely to each other and the two yoke arms of said output shaft
- wherein said universal joint further includes a resistance applying mechanism (16) that generates the maximum resistance load in an oscillating movement of each of said two spider arms when axes of said two spider arms are included in a plane that includes the axes of both of said input and output shafts
- wherein said resistance applying mechanism is configured so that at least one of said bearings has a resistance load that varies in accordance with an oscillating angle (based on the thrust load at that angle)
- wherein a bearing cup (20) is press-fit in a circular yoke hole formed in said yoke arm and a plurality of needles (21) are provided between the inner surface of said bearing cup (20) and a circular tip part (12d) of said spider arm (12), and the engaging projection (16b) is formed at the bottom of said bearing cup (20) and engages the cam surface (12e) of the spider arm (12)
- wherein said resistance applying mechanism is provided at both of said input shaft and output shaft sides (see Figure 1)

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Myers, USP 5,725,431, in view of McElwain, USP 4,067,626.

Myers discloses all of the claim limitations as applied above.

Myers does not disclose that the yoke includes substantially oval yoke hole and a substantially oval tip part of said spider arm, wherein a bearing cup is press-fit in said substantially oval yoke hole and a plurality of needles are provided between the inner surface of this bearing cup and said substantially oval tip part of said spider arm.

McElwain teaches a yoke that includes substantially oval yoke hole (26, see Figure 3) and a substantially oval tip part of said spider arm (16), wherein a bearing cup (24) is press-fit in said substantially oval yoke hole (26) and a plurality of needles (20) are provided between the inner surface of this bearing cup (24) and said substantially oval tip part of said spider arm (16) for the purpose of dissipating the load on the needles to prolong the operation life of the joint (C1/L33-38).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Myers and provide a yoke that includes substantially oval yoke hole and a substantially oval tip part of said spider arm, wherein a bearing cup is press-fit in said substantially oval yoke hole and a plurality of needles are provided between the inner surface of this bearing cup and said substantially oval tip part of said

spider arm, as taught by McElwain, for the purpose of dissipating the load on the needles to prolong the operation life of the joint.

11. Claims 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Myers, USP 5,725,431, in view of Moriyama, USP 5,580,314.

Myers discloses all of the claim limitations as applied above.

Myers does not disclose that the universal joint is connected to a steering column and a steering mechanism, that two universal joints and an intermediate shaft connect the input and output shafts, wherein both of said two universal joints have crossing angles that are substantially equal.

Moriyama teaches two universal joints (7 and 9) connected to a steering column (3) and a steering mechanism (connected to 10) and an intermediate shaft (8), wherein both of said two universal joints (7 and 9) having crossing angles that are substantially equal.

Since both Moriyama disclose systems using universal joints, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the universal joint of Myers in the steering assembly of Moriyama to achieve the predictable result of making a steering assembly which has a universal joint which minimizes the amount of flex effort or torque for a given preload to prevent vibration (Myers, C3/L1-12).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Pilkington whose telephone number is 571-272-5052. The examiner can normally be reached on Monday-Friday, 7AM-3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached at 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. P./
Examiner, Art Unit 3682
8/14/08

/Richard WL Ridley/

Supervisory Patent Examiner, Art Unit 3682